California Environmental Protection Agency Air Resources Board

YANMAR CO., LTD.

EXECUTIVE ORDER U-R-028-0690 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)			
2015	FYDXL3.32TDA	3.319	Diesel	8,000			
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION				
Electronic Direct Injection, Turbocharger, Exhaust Gas Recirculation, Electronic Control Module, Periodic Trap Oxidizer, Oxidation Catalyst			Crane, Loader, Tractor, Dozer, Pump, Compressor, Excavato				

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	СО	PM	ACCEL	LUG	PEAK
37 ≤ kW < 56	Tier 4 Final	STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A
		CERT			3.4	0.2	0.001			

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this

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day of December 2014.

Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

Engine Model Summary Template

ATTACHMENT

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque		9.Emission Control Device Per SAE J1930	
FYDXL3.32TDA	N/A	4TTWPC	72.4/2000	57.8	25.5	226.6/1300	69.1	19.8	ECU EM EGR DFI TC PTOX OC	Black of Hilling (1994) (Fred Tables of the control
FYDXL3.32TDA	N/A	4TTNAC	72.4/2500	48.4	26.7	206.5/1625	62.5	22.4	ECU EM EGR DFI TC PTOX OC	
FYDXL3.32TDA	N/A	4TTPAC	72.4/2400	49.7	26.3	206.5/1560	62.1	21.3	ECU EM EGR DFI TC PTOX OC	
FYDXL3.32TDA	N/A	4TTQAC	72.4/2300	51.7	26.2	206.5/1495	61.9	20.4	ECU EM EGR DFI TC PTOX OC	accordance in the contract of
FYDXL3.32TDA	N/A	4TTSAC	72.4/2200	53.4	25.9	217.9/1430	66.2	20.9	ECU EM EGR DFI TC PTOX OC	, which with a country to the control of the contro
FYDXL3.32TDA	N/A	4TTVAC	72.4/2100	55.6	25.7	217.9/1365	66.3	19.9	ECU EM EGR DFI TC PTOX OC	engger gar gergeggeggeggeggeggeggeggeggeggeggeggegg
FYDXL3.32TDA	N/A	4TTWAC	69.7/2000	55.6	24.5	217.9/1300	66.4	19.0	ECU EM EGR DFI TC PTOX OC	all Manufacture and a supplier recovered to transport a socience continue data of the o
FYDXL3.32TDA	N/A	4TTNACJ	72.4/2500	48.4	26.7	206.5/1800	64.7	25.7	ECU EM EGR DFI TC PTOX OC	and the state of t